NAVAL SURFACE WARFARE CENTER

SHIP ROLL STIMULATION SYSTEM (SRSS) STATUS

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Ship Roll Stimulator System (SRSS

Objective

Induce accurate, repeatable T-ACS ship roll, up to $\pm$ 3 degrees, dockside and at anchor. Provide a realistic, cost effective crane operator training facility and a test platform to validate future R&D crane improvements.

Review of SRSS Requirements

- **Develop one system for T-ACS 5 to produce up to ± 3 degrees ship roll**
- **Conform to available ship space**
- **Removable (or disengaged) within a two day time frame**
- **ABS and Coast Guard approved system**
- **Safe to operate**
- **Controllable within period variation due to ship loading**

FY00 Milestones Status

- **Select stimulation mechanism, 1st Q, FY00** — **Complete**
- **Preliminary, full scale system design specification, including drawings, 3rd Q FY00** — **Complete**
- **Full scale design & installation specification, 4th Q, FY00** — **Complete**
- **Naval architect review, 4th Q, FY00** — **Complete**
- **Fabrication and installation contract awarded 4th Q, FY00** — **Complete**
- **Fabrication ongoing** — **75% Complete**
- **Site survey** — **In Progress**

FY01 Milestones Status

- **Design Review with NSWCCD/MarAd/NAVSEA**

1st Q FY01; all issues resolved Complete

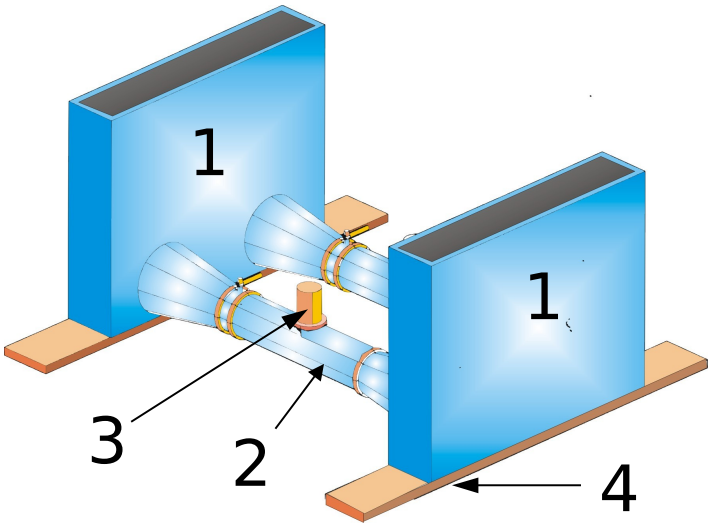
- **Design submitted to ABS for concurrence,**

1st Q, FY01; response to issues raised submitted

to ABS Ongoing

- **Investigating automatic SRSS control (CSS) Ongoing**
- **Land test one stack assembly 2nd Q**
- **Develop Demonstration Test Plan 3rd Q**
- **Operator training 3rd Q**
- **Operation & Maintenance Manual 3rd Q**
- **Installation 4th Q**
- **Functional tests 4th Q**
- **Pierside performance tests/Demonstration 4th Q**
- **Stimulation Mechanism Demonstration Report 4th Q**

SRSS Main Components



FLUME TANK SYSTEM

1. **Water Tanks**
2. **Transfer Tubes**
3. **Hydraulic Bow Thruster Units**
4. **Base Mounting Structure**

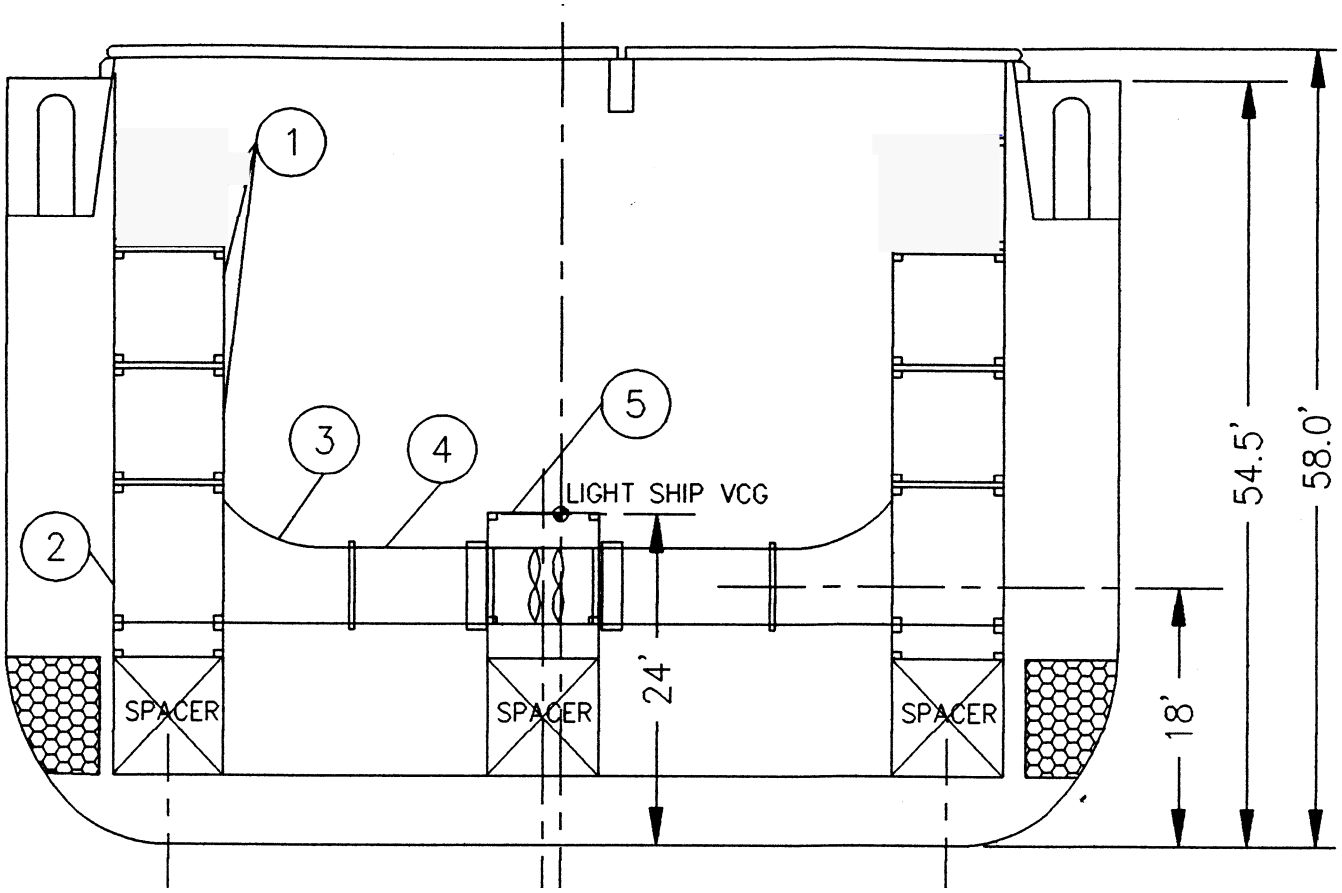
Modular Design

S Operating Specifications; Single Unit

Horizontal cross sectional area of stack tanks	145	square feet
ack Height (93” + 105" + 105")	25' -	3"
nimum water height due to pump cavitation limit	11' -	0"
aximum water height to provide 4' safety margin	21' -	0"
verage water height	16' -	0" (+/- 3 foot active motion)
Maximum volume transferred	+/-	440 cubic feet
laximum weight transferred	+/-	27,390 pounds
Maximum flow rate	120,000	gpm
aximum water velocity	12	feet per second
Power supply	300	amp, 480 volt, 3 phase, 60 hertz
perating water capacity	40,000	gallons
perating water weight (includes water in cross pipe)	335,000	pounds
laximum weight of system in 20' container cell	226,000	pounds
Allowable weight of 6 high, 20 LT, 20' containers	268,800	pounds
Maximum Operating Horsepower	200	Hp

SRSS LAYOUT

T-ACS 5 FLICKERTAIL STATE Cross Section Looking AFT (Hold #4



1: 20’ Stack Tank 2: 20’ Bottom Tank 3: Bell Adapter 4: 66” OD

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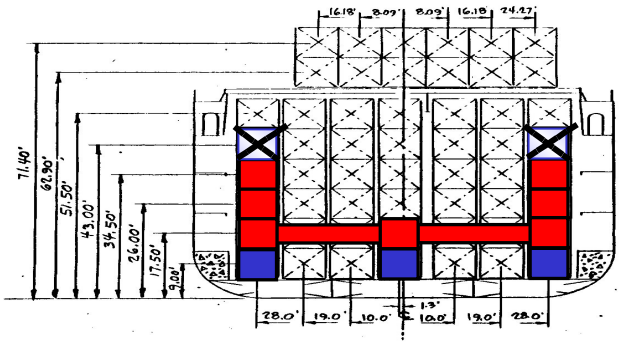
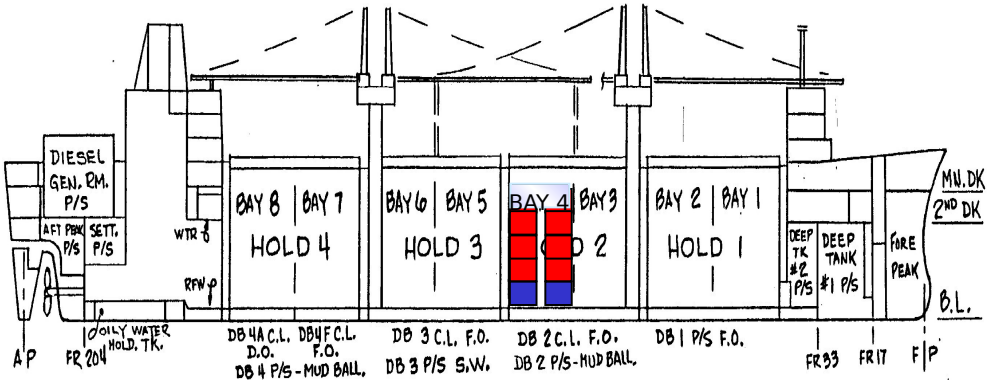
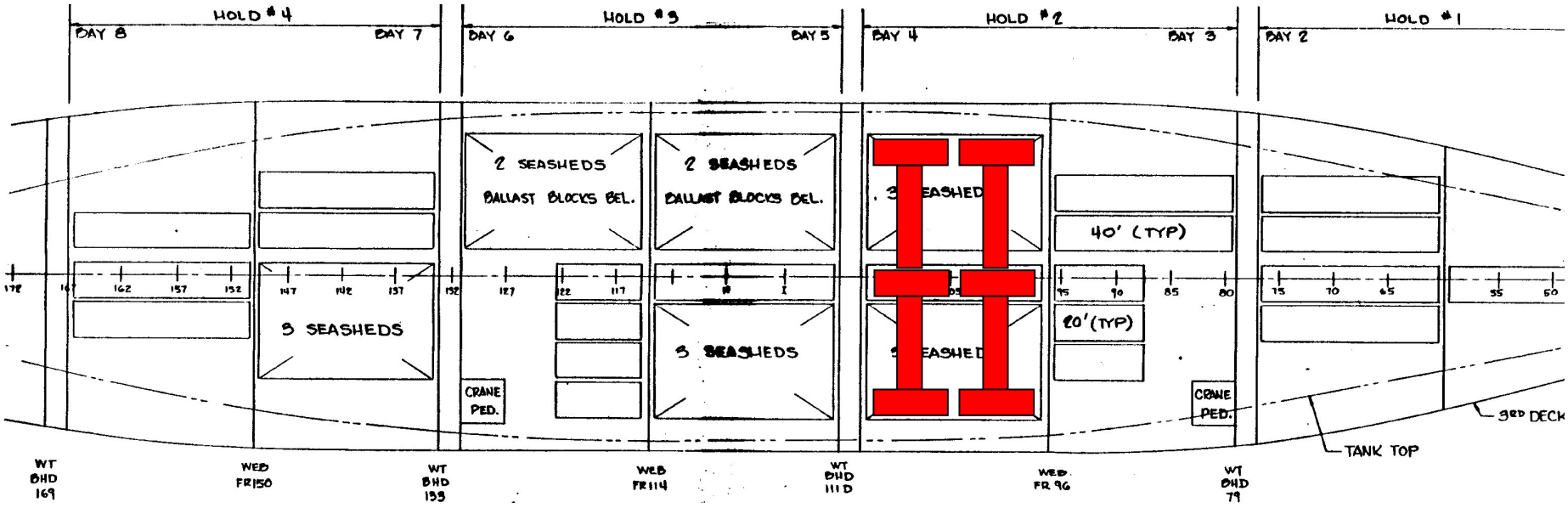
5: Flume Power Unit Container

SRSS INSTALLATION

Recommended SRSS Location: Hold 2, Cell Group 4 SS FLICKERTAIL STATE





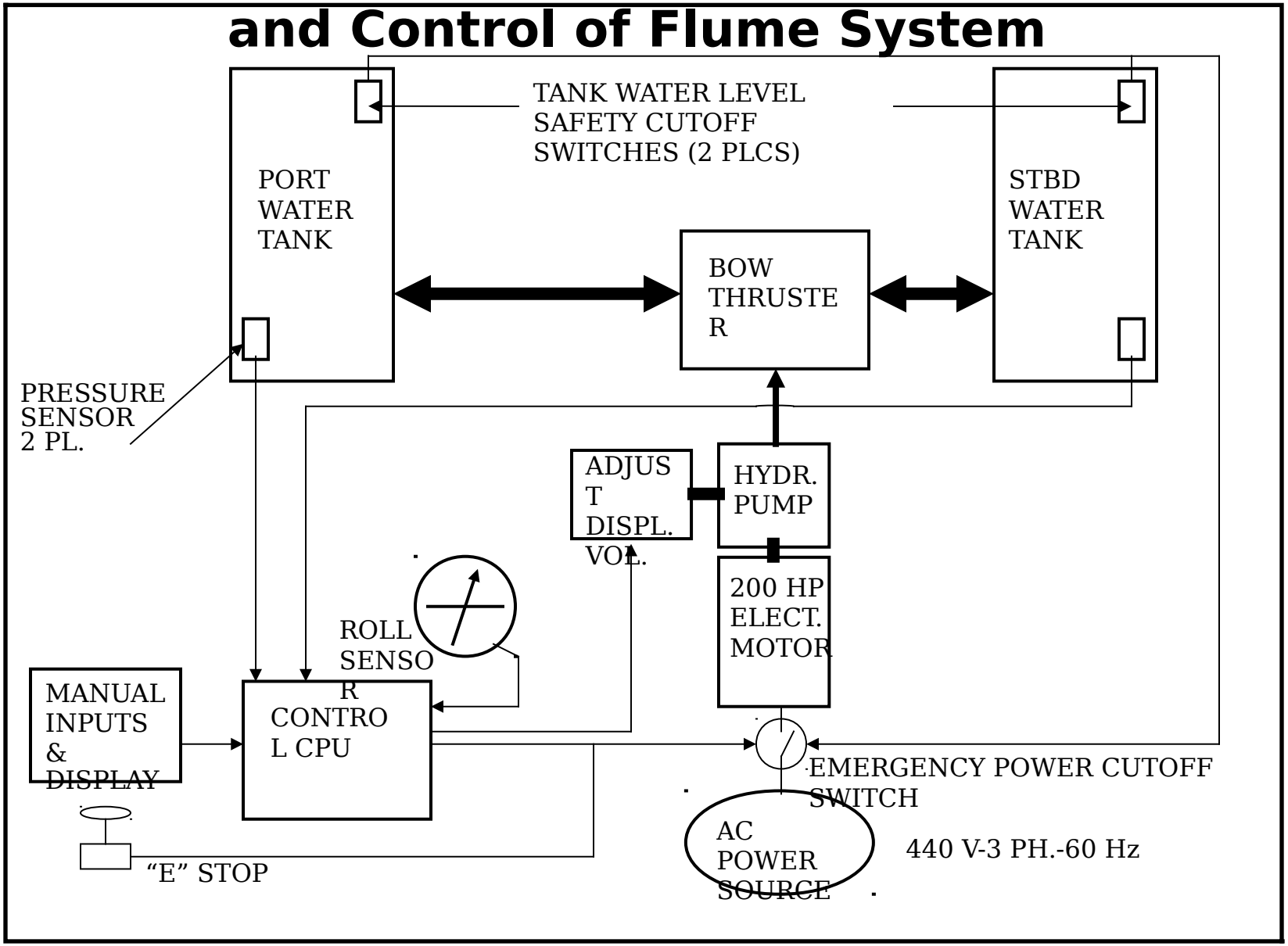


SRSS FABRICATION DETAILS

SRSS Transition Section

SRSS Container Size Modules

Block Diagram of Major SRSS Components and Control of Flume System



Block Diagram

SRSS Manual Inputs and Control Outputs